

FORM PTO-1390 (REV. 9-2001)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER FORSAL-30
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371			U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 09/980061
INTERNATIONAL APPLICATION NO. PCT/IB00/00732	INTERNATIONAL FILING DATE 31 May 2000 (31.05.00)	PRIORITY DATE CLAIMED 03 June 1999 (3.06.99)	
TITLE OF INVENTION Method and Arrangement for Positioning a Shoe of a Shoe Press/Shoe Calender in a Paper Machine			
APPLICANT(S) FOR DO/EO/US HASANEN, Kari; TORVI, Timo and LEPPÄKOSKI, Helena			
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:			
<p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</p> <p>4. <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> has been communicated by the International Bureau.</p> <p style="margin-left: 20px;">c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</p> <p>6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).</p> <p style="margin-left: 20px;">a. <input type="checkbox"/> is attached hereto.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</p> <p>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <p style="margin-left: 20px;">a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> have been communicated by the International Bureau.</p> <p style="margin-left: 20px;">c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p style="margin-left: 20px;">d. <input type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)).</p> <p>9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p> <p>Items 11 to 20 below concern document(s) or information included:</p> <p>11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>13. <input checked="" type="checkbox"/> A FIRST preliminary amendment.</p> <p>14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</p> <p>15. <input type="checkbox"/> A substitute specification.</p> <p>16. <input type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.</p> <p>18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</p> <p>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</p> <p>20. <input type="checkbox"/> Other items or information:</p>			

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)		INTERNATIONAL APPLICATION NO.		ATTORNEY'S DOCKET NUMBER	
097/980061		PCT/IB00/00732		FORSAL-30	

21. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. \$1040.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$890.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$740.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$710.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				CALCULATIONS PTO USE ONLY 	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).					
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	13 - 20 =	0	x \$18.00		
Independent claims	3 - 3 =	0	x \$84.00		
MULTIPLE DEPENDENT CLAIM(S) (if applicable)				+ \$280.00	
TOTAL OF ABOVE CALCULATIONS =				\$ 1040.00	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				+ \$ 0.00	
SUBTOTAL =				\$ 1040.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).					
TOTAL NATIONAL FEE =				\$ 1040.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +				\$ 0.00	
TOTAL FEES ENCLOSED =				\$ 1040.00	
				Amount to be refunded:	\$
				charged:	\$

a. ☒ A check in the amount of \$ 1040.00 to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.


c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 15-0660. A duplicate copy of this sheet is enclosed.

d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

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 33212
 REGISTRATION NUMBER

In The United States Patent And Trademark Office

Applicant: Kari Hasanen et al.

Date: November 29, 2001

Date Filed: Simultaneously herewith

Docket No.: FORSAL-30

PCT App. No.: PCT/IB00/00732

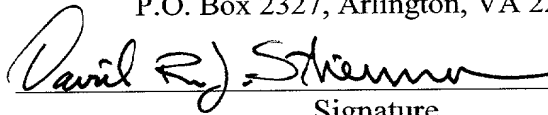
For: Method and Arrangement for Positioning a Shoe of a Shoe Press/Shoe
Calendar in a Paper Machine

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Signature

David R. J. Stiennon, Reg. No. 33212

Name of applicant, assignee or Registered Representative

Preliminary Amendment

Box PCT
U.S. Patent and Trademark Office
P.O. Box 2327
Arlington, VA 22202

Dear Sir:

Prior to examination of the above application, please amend the application as
follows.

In the Claims:

Please cancel claims 1-11, and add the following new claims:

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12. A method for positioning a shoe of a shoe press/shoe calender in a paper machine comprising the steps of:

measuring the position of the shoe of the shoe calender/shoe press; and
controlling the position of the shoe based on the results of the measurement so as
to be as desired in the direction of nip compression.

13. The method of claim 12 wherein the position of the shoe is measured by at least two position measuring sensors.

14. The method of claim 13 wherein the shoe has a driving side edge and a tending side edge, and wherein the position of the shoe is measured by a position measuring sensor close to the driving side edge, and a position sensor close to the tending side edge.

15. The method of claim 14 wherein a position sensor is located in the middle of the machine, and the position of the shoe is measured by the position measuring sensor close to the driving side edge, the position measuring sensor close to the tending side edge, and the position sensor located in the middle of the machine.

16. The method of claim 12 wherein the movement of the shoe is regulated based on the measurement results utilizing a computing algorithm, and hydraulic cylinders of the shoe of the shoe press/shoe calender are controlled to operate such that the shoe moves in a desired manner to a desired position.

17. The method of claim 12 wherein the shoe is controlled to be closed into the nip formed against a backing roll/thermoroll in a manner that is optimal with respect to the running situation, advantageously in a desired position and/or at a desired speed.

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18. An arrangement for positioning a shoe of a shoe press/shoe calender in a paper machine comprising:

a shoe roll, having a shoe and hydraulic cylinders connected thereto for moving the shoe;

at least two measuring devices for measuring the position of the shoe; and

means for controlling the position of the shoe based on the results obtained by means of the measuring devices so as to be as desired in the direction of nip compression.

19. The arrangement of claim 18 wherein the at least two measuring devices comprise position measuring sensors placed close to a tending side edge of the paper machine and a driving side edge of the paper machine.

20. The arrangement of claim 19 further comprising a position measuring sensor placed in the middle of the paper machine between the tending side edge and the driving side edge.

21. The arrangement of claim 18 further comprising means for moving the hydraulic cylinders based on the results of the measurement in order to position the shoe in a desired position.

22. The arrangement of claim 18 further comprising a unit in which a computing algorithm is carried out based on the results of the measurement in order to give flow instructions to hydraulic valves which control the hydraulic cylinders such that the hydraulic cylinders move the shoe to a desired position.

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23. An apparatus in a paper machine comprising:
a backing roll;
a shoe;
a belt within which the shoe is positioned, the shoe being loaded against the
backing roll to define a nip by a plurality of hydraulic cylinders;
a frame extending within the belt, the hydraulic cylinders supporting the shoe on
the frame;
at least two position measuring sensors arranged in connection with the shoe
between the shoe and the frame, the sensors measuring the position of the
shoe and producing position measurements; and
a processing unit which receives the position measurements from the position
measuring sensors, the processing unit generating signals which control the
hydraulic cylinders to move the shoe as desired in the direction of nip
compression.

24. The apparatus of claim 23 wherein the at least two position measuring
sensors comprise:
a position measuring sensor placed close to a tending side edge of the paper
machine;
a position measuring sensor placed close to a driving side edge of the paper
machine; and
a position measuring sensor placed in the middle of the paper machine.

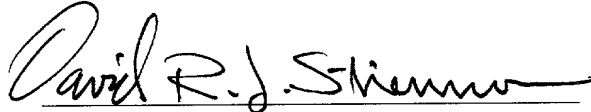
REMARKS

Claims 12–24 remain pending in the application.

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Applicant believes that no new matter has been added by these amendments and that the application, as amended, is ready for examination. Favorable action thereon is respectfully solicited.

Respectfully submitted,



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Amdt1.app

Method and arrangement for positioning a shoe
of a shoe press / shoe calender in a paper machine

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The invention relates to a method for positioning a shoe press / shoe calender in a paper machine.

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The invention also relates to an arrangement for positioning a shoe of a shoe press / shoe calender in a paper machine, which arrangement comprises a shoe roll or equivalent which includes a shoe and hydraulic cylinders connected thereto for moving the shoe, and a support element to which the hydraulic cylinders and the shoe are attached.

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As known in the state of the art, as loading rolls in a shoe press / shoe calender are used loading rolls in which a shoe is placed inside a polyurethane belt. The belt is attached at ends so as to be oilproof and the sock/belt is held tight around the shoe structure. The shoe structure comprises oil ducts and hydraulic cylinders for pressing the shoe against a backing roll / thermoroll. One known arrangement for a so-called belt calender is disclosed in **FI patent application 943278**, which discloses a device for polishing a paper web or a board web provided with a polishing zone through which the web is passed and which has a given thickness measured in the direction of the web to achieve a longer time of dwell of the web. The device is provided with two polishing surfaces defining the polishing zone on both sides, one of said surfaces being formed by a mantle of a machine-driven roll and the other of said surfaces being formed by a glide felt that runs around; provided with a glide shoe which is wrapped by the glide felt and which has a glide surface complementary to the mantle surface of the roll; provided with means for pressing the roll and the glide shoe against each other.

One problem in the known arrangements is that the position of the shoe is not known, wherefore, for example, when closing, the shoe may be positioned unevenly with the

result that an uneven nip force is produced. This may lead, among other things, to breaking of the web.

One problem in calenders, at high speeds in particular, because of an undesirable position of the shoe, is an uneven/undesirable type of draw which is effective in the nip, in which connection uneven compression may break the web.

Moreover, a problem in presses under heavy load is that when the shoe is in an undesirable position, the backing roll and the belt will wear. In addition, problems may arise in the lubrication of the shoe because, when the shoe is out of line, a lubricating oil film is thinner on the edge which comes first into contact with the backing roll.

In a press section, problems may be caused by the fact that, when the nip is closed in an undesirable manner, the press felt may be crumpled.

In high-speed machines with a speed of over 1000 m/min, problems may arise in the controllability of felts and wires, if the shoe pulls felts/wires askew because of its incorrect position .

An object of the invention is to create a solution to the problems described above.

An object of the invention is to create an arrangement in which the position of the shoe is known and the shoe can be guided to a desired position, whereby the problems described above are eliminated.

With a view to achieving the objectives described above as well as those which will come out later, the method according to the invention is mainly characterized in that, in the method, the position of a shoe of a shoe calender / shoe press is measured and that, in the method, the position of the shoe is controlled based on the results of the measurement so as to be as desired in the direction of nip compression.

The arrangement according to the invention is in turn mainly characterized in that the arrangement comprises further at least two measuring devices for measuring the position of the shoe and means for guiding the shoe as desired in the direction of nip compression based on the results obtained by means of the measuring devices. In accordance with the invention, the means for controlling the shoe based on the results obtained by the measuring devices include a processing unit, which can be, for example, a programmable logic or a process or computing station (CPU) of a distributed automation system. The signals computed by the processing unit can be passed to valves which control the movement of cylinders controlling the movement of the shoe, for example, by using standard current or voltage signals of instrumentation or some automation field bus.

In accordance with the invention, the position of the shoe in a shoe calender / shoe press is measured by at least two measuring devices suitable for position measurement, for example, a linear sensor. The position measuring sensors are placed most advantageously close to the edges of the driving and tending sides and in wide machines also in the middle area. In that connection, the position of the shoe is found out, and the nip is caused to close in a desired position since the movements of the hydraulic cylinders can be regulated accurately based on the measurement results obtained.

In accordance with the invention, the shoe of the shoe press / shoe calender is provided with at least two position measuring sensors and the movement of the shoe is regulated based on data provided by the sensors, for example, utilizing a computing algorithm, and the hydraulic cylinders are controlled to operate such that a desired movement and position of the shoe is assured in the direction of nip compression.

When the nip is closed/opened in accordance with the invention, there is no risk of the web breaking, because the position of the shoe is known precisely when the measurement result provided by the position measuring sensors has been received, and the shoe can be positioned in a desired position. In accordance with the invention, also after a web break or downtime, it is possible to control the oil flows of the hydraulic

cylinder based on the position data obtained from the position measuring sensors such that the nip is controlled to close in a desired manner, whereby the position of the shoe is caused to be as desired.

- 5 In the arrangement according to the invention, the shoe can thus be controlled to close in an optimal manner with respect to the running situation.

10 In the following, the invention will be described in more detail with reference to the figures in the accompanying drawing, to the details of which the invention is, however, not by any means intended to be narrowly confined.

Figure 1 schematically shows a shoe roll with which one application of the arrangement according to the invention has been combined.

- 15 Figure 2 schematically shows one application of the measurement arrangement according to the invention.

Figure 3 shows loading of a shoe roll in the direction of nip compression as a schematic application.

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- As shown in Figs. 1 and 2, an extended-nip roll, or a shoe roll 10 comprises a shoe 11 located inside a belt 13, which shoe includes hydraulic cylinders 12 for loading the shoe 11. In a loading situation, the belt 13 adjusts itself to the shape of the nip between the shoe roll 10 and a backing roll, to the shape of the shoe 11. The hydraulic cylinders 12 and the shoe 11 are fixed to a frame 14 of the roll 10 and at least two position measuring sensors 15 are arranged in connection with the shoe 11 between the shoe 11 and the frame 14 inside the extended-nip (shoe) roll 10, the position of the shoe 11 between the extended-nip roll 10 and the backing roll 20 in the nip being controlled so as to be of a desired shape based on data provided by the position measuring sensors. Of course, the shoe structure also includes the necessary oil ducts and structures associated therewith, which are not shown in the figures for the sake of
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clarity. The measuring apparatus or arrangement can be, for example, a linear sensor or an absolute sensor. In order to identify the position of the shoe it is also possible to use some optical arrangement which could be, for example, a directional light source attached to the shoe and moving with the shoe, and a CCD camera matrix fixedly mounted on the frame. In that connection, the location of the shoe would become clear from which of the CCD cells "see" a light signal.

The arrangement shown in Fig. 1 comprises three position measuring sensors 15, the regulation of the position of the shoe 11 being performed based on position measurements 16_1 , 16_2 , 16_N (Fig. 2) provided by said sensors by computing signals 18_1 , 18_2 , ... 18_N in a processing unit 17 based on a computing algorithm, which signals are flow instructions for hydraulic valves 19. The movement of the hydraulic cylinders 12 is controlled by means of the signals 18_1 , 18_2 , ... 18_N in order to move the shoe 11 in a desired manner to a desired position in the direction S of nip compression (Fig. 3).

The arrangement in accordance with the invention comprises at least two measuring devices 15 for measuring the position of the shoe 11 and means 12; 16_1 , 16_2 , ... 16_N ; 17; 18_1 , 18_2 , ... 18_N ; 19 for controlling the position of the shoe 11 based on the results obtained from the measuring devices so as to be as desired.

In accordance with an embodiment of the invention regarded as advantageous, the position of the shoe roll 10 of a press/calender is measured by means of the position measuring sensors 15, and when the position of the shoe 11 of the shoe roll 10 is found to be incorrect based on the measurement results 16_1 , 16_2 , 16_N , the means for rectifying the position of the shoe 11 are activated. The regulation of the position of the shoe 11 is carried out based on a computing algorithm by computing in the processing unit 17 the control signals 18_1 , 18_2 , ... 18_N for the hydraulic cylinders 19. The computing algorithm may be, for example, of the form $\Delta Q = f(\Delta X)$, wherein $Q = Q_0 - Q_N$, i.e. a change in the flow of oil, and $X = X_T - X_M$, i.e. a desired shoe position - a position measurement. The regulation of position controls the hydraulic

valves 19 such that the hydraulic cylinders 12 change the position of the shoe 11 to a desired position in which the shoe 11 can be askew or straight. Normally, the desired position of the shoe 11 is "straight", which means that all the measuring devices 15 get substantially the same value as a result of the measurement of the position. The results must, of course, be interpreted within the limits of the measurement accuracy of the devices.

Example: if there are 2 sensors in use and their measurement accuracy is ± 1 mm. Then the measurement result

sensor 1:	$x_1 = 12.31$ mm
sensor 2:	$x_2 = 12.14$ mm
	$X_d = x_1 - x_2 = 0.17$ mm
measurement accuracy	
of sensors:	$e_x = 0.1$ mm

can be interpreted as a situation "shoe straight" because the deviation x_d is not significantly greater than the measurement accuracy e_x .

However, if it were desired for some reason or other that the position of the shoe be askew instead of straight (for example, on the tending side 3 mm higher than on the driving side), the arrangement according to the invention also allows that.

The invention may also be applied when the nip is closed/opened between the shoe roll 10 and its backing roll thermoroll such that the shoe 11 opens/closes in an optimal fashion, for example, in a desired position and/or at a desired speed. When there is available analog measurement data on the position of the shoe 11 according to the invention, the nip can be controlled so as to close also in a manner other than at a uniform speed. It is possible that at the initial stage of closing, when the nip is still clearly open, it is beneficial to carry out the movement as quickly as possible. When the nip starts to be almost closed, it is advisable to slow down the movement in order that the closing operation should take place more softly. Different paper grades may require that the closing of the nip is softened differently - in the case of thick and

durable paper grades the function is not needed at all, whereas in the case of grades which are thin or otherwise poorer in strength, the slowing down of the closing at the final stage is necessary.

- 5 As shown in Fig. 3, the shoe 11 of the extended-nip roll 10 is guided to a desired position in the direction of nip compression S so as to be loaded against the backing roll 20. The cross-machine direction is denoted in the figure with the reference sign W.
- 10 Above, the invention has been described only with reference to some of its advantageous embodiment examples, to the details of which the invention is, however, not intended by any means to be narrowly confined. Many variations and modifications are feasible within the inventive idea defined in the accompanying claims.

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Claims

1. A method for positioning a shoe of a shoe press / shoe calender in a paper machine, **characterized** in that, in the method, the position of the shoe (11) of the shoe calender / shoe press is measured and that, in the method, the position of the shoe is controlled based on the results of the measurement so as to be as desired in the direction of nip compression.

2. A method according to claim 1, **characterized** in that, in the method, the position of the shoe (11) is measured by means of at least two position measuring sensors (15).

3. A method according to claim 1 or 2, **characterized** in that, in the method, the position of the shoe (11) is measured by means of the position measuring sensors (15) close to the edges of the driving side and the tending side of the machine.

4. A method according to any one of claims 1 to 3, **characterized** in that, in the method, the position of the shoe (11) is measured by means of three position measuring sensors (15) close to the edges of the driving and tending sides and in the middle of the machine.

5. A method according to any one of claims 1 to 4, **characterized** in that, in the method, the movement of the shoe (11) is regulated based on the measurement results utilizing a computing algorithm, and hydraulic cylinders (12) of the shoe (11) of the shoe press / shoe calender are controlled to operate such that the shoe (11) moves in a desired manner to a desired position.

6. A method according to any one of claims 1 to 5, **characterized** in that the shoe (11) is controlled to be closed into the nip formed against a backing roll/thermoroll in a manner that is optimal with respect to the running situation, advantageously in a desired position and/or at a desired speed.

7. An arrangement for positioning a shoe of a shoe press / shoe calender in a paper machine, which arrangement comprises a shoe roll (10) or equivalent which includes a shoe (11) and hydraulic cylinders (12) connected thereto for moving the shoe (11), **characterized** in that the arrangement comprises further at least two measuring devices (15) for measuring the position of the shoe (11) and means (12; 16₁, 16₂ ... 16_N; 17; 18₁, 18₂, ... 18_N; 19) for controlling the position of the shoe (11) based on the results obtained by means of the measuring devices so as to be as desired in the direction of nip compression.

8. An arrangement according to claim 7, **characterized** in that the measuring devices are position measuring sensors (15) which are placed close to the edges of the tending and driving sides of the machine.

9. An arrangement according to claim 7 or 8, **characterized** in that the arrangement further comprises means (18₁, 18₂, ... 18_N; 19) for moving the hydraulic cylinders (12) based on the results of the measurement in order to position the shoe (11) in a desired position.

10. An arrangement according to any one of claims 7 to 9, **characterized** in that the arrangement comprises a unit (17) in which a computing algorithm has been carried out based on the results of the measurement in order to give flow instructions to hydraulic valves which control the hydraulic cylinders (12) such that the hydraulic cylinders (12) move the shoe to a desired position.

11. An arrangement according to any one of claims 7 to 10, **characterized** in that the arrangement comprises three position measuring sensors (15), which are placed close to the tending and driving sides and in the middle of the machine.

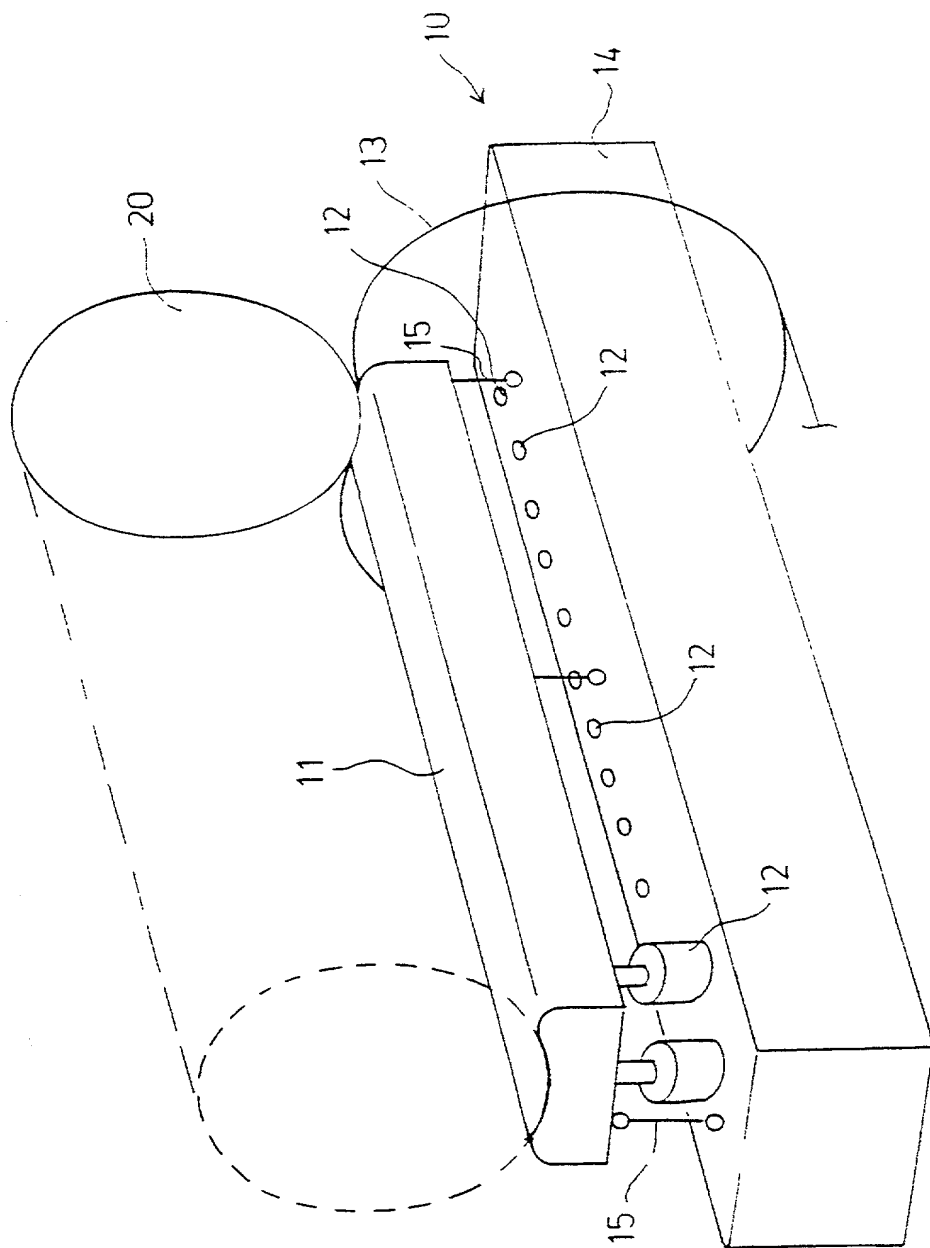


FIG. 1

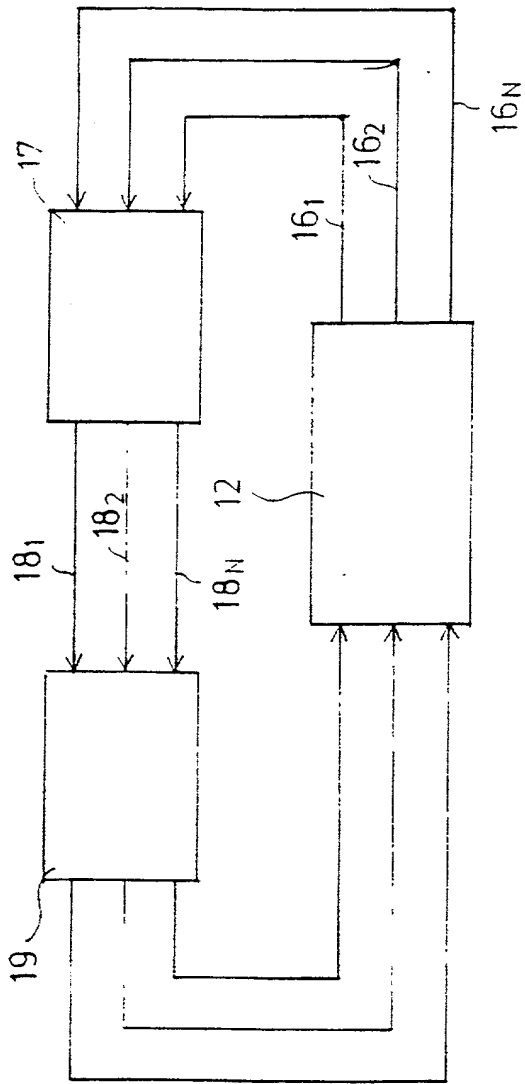


FIG. 2

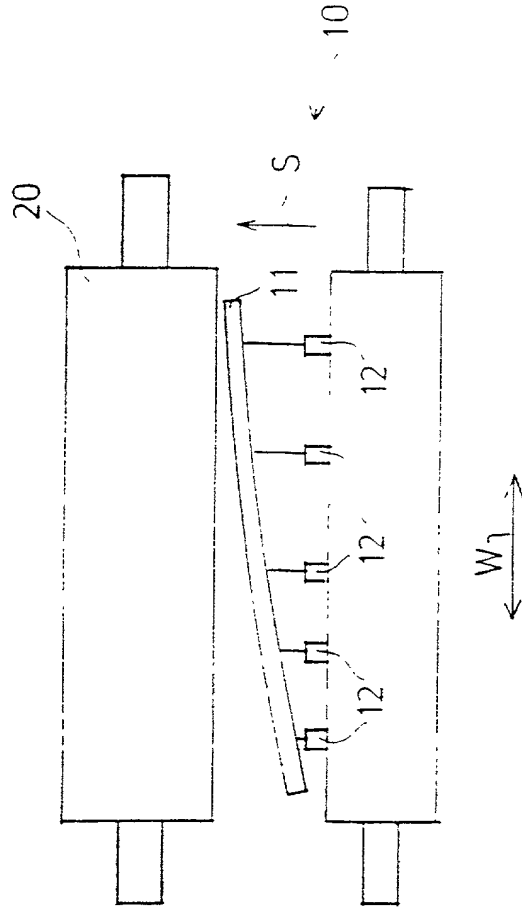


FIG. 3

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**DECLARATION FOR UTILITY OR
DESIGN
PATENT APPLICATION
(37 CFR 1.63)**

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OR

☒ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number FORSAL-30**First Named Inventor** HASANEN, Kari**COMPLETE IF KNOWN****Application Number** 09/980,061 ✓**Filing Date** November 29, 2001 ✓**Art Unit****Examiner Name****As the below named inventor, I hereby declare that:**

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am the original and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Method and Arrangement for Positioning a Shoe of a Shoe Press/Shoe Calendar in a Paper Machine ✓

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 05/31/2000 ✓ as United States Application Number or PCT International

Application Number PCT/IB00/00732 ✓ and was amended on (MM/DD/YYYY) 11/29/2001 (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
991272 ✓	Finland ✓	06/03/1999 ✓	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

[Page 1 of 2]

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NAME OF SOLE OR FIRST INVENTOR :

☐ A petition has been filed for this unsigned inventorGiven Name Kari
(first and middle [if any])Family Name Hasanen
or SurnameInventor's
Signature2.1.2002

Date

Kerava

FIX

Residence: City

State

Finland

Country

FI

Citizenship

Päivärinteentie 13 A 6

Mailing Address

Kerava

City

State

FIN-04250

ZIP

Finland

Country

NAME OF SECOND INVENTOR:

☐ A petition has been filed for this unsigned inventorGiven Name Timo
(first and middle [if any])Family Name Torvi
or SurnameInventor's
Signature9.1.2002

Date

Järvenpää

FIX

Residence: City

State

Finland

Country

FI

Citizenship

Wärtsiläkatu 76 B 40

Mailing Address

Järvenpää

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State

FIN-04440

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Finland

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☒ Additional inventors are being named on the 1 supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

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DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet Page <u>1</u> of <u>1</u>
--------------------	----------------------------------------------------------------------------------

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name <u>Helena</u>		Family Name or Surname <u>Leppäskoski</u>	
Inventor's Signature 		Date <u>12/20/01</u>	
Järvenpää Residence: City <u>FIX</u>	State	Finland Country	FI Citizenship
Sirukuja 6 Mailing Address			
Mailing Address			
City <u>Järvenpää</u>	State	FIN-04440 ZIP	Finland Country
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name		Family Name or Surname	
Inventor's Signature			Date
Residence: City	State	Country	Citizenship
Mailing Address			
Mailing Address			
City	State	ZIP	Country
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name		Family Name or Surname	
Inventor's Signature			Date
Residence: City	State	Country	Citizenship
Mailing Address			
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POWER OF ATTORNEY OR AUTHORIZATION OF AGENT

Application Number	PCT/IB00/00732
Filing Date	May 31, 2000
First Named Inventor	Kari Hasanen
Title	Method and Arrangement for...
Group Art Unit	
Examiner Name	
Attorney Docket Number	FORSAL-30

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I am the:

☒ Applicant/Inventor.

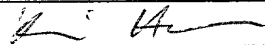
☐ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

SIGNATURE of Applicant or Assignee of Record

Name

Kari Hasanen

Signature



Date

2, 1, 2002

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 3 forms are submitted.

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I am the:

☒ Applicant/Inventor.

☐ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

SIGNATURE of Applicant or Assignee of Record

Name	Timo Torvi
Signature	<i>TIM TORVI</i>
Date	9.1.2002

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Examiner Name	
Attorney Docket Number	FORSAL-30

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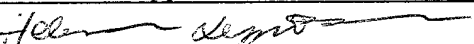
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SIGNATURE of Applicant or Assignee of Record

Name

Helena Leppäskoski

Signature



Date

12/20/01

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